(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
29 January 2004 (29.01.2004)

PCT

(10) International Publication Number
WO 2004/010039 A3

(51) International Patent Classification[7]: E21B 19/16, 7/00, 29/10, F16L 21/00

(21) International Application Number: PCT/US2003/019993

(22) International Filing Date: 24 June 2003 (24.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/397,284 19 July 2002 (19.07.2002) US

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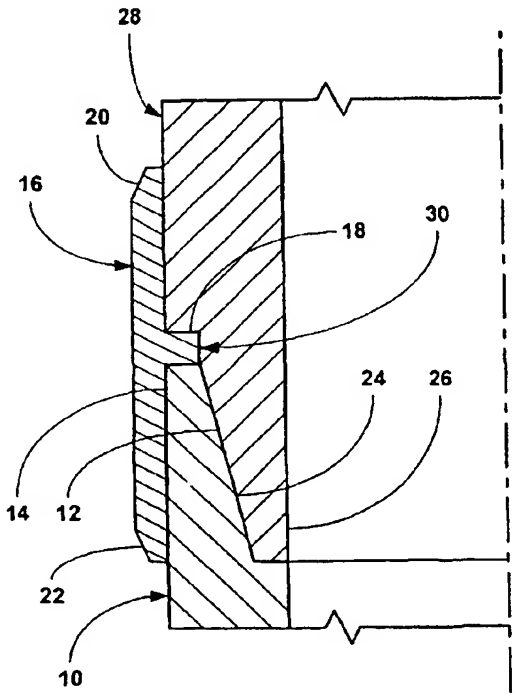
(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

*[Continued on next page]*

(54) Title: PROTECTIVE SLEEVE FOR THREADED CONNECTIONS FOR EXPANDABLE LINER HANGER

(57) Abstract: A tubular sleeve (16) is coupled to and overlaps the threaded connection between a pair of adjacent tubular members (10 and 28). The adjacent tubular members (10 and 28) are then radially expanded and plastically deformed.



CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) **Designated States** *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**

— *of inventorship (Rule 4.17(iv)) for US only*

**Published:**

— *with international search report*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) **Date of publication of the international search report:**
8 July 2004

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/19993

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : E21B 19/16,7/00,29/10; F16L 21/00
US CL : 166/380,277,242.2,250.08;175/40,57;285/370;73/152.54
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : Please See Continuation Sheet

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X<br>---<br>Y | US 2002/0066578 A1 (Broome) 06 June 2002 (06.06.2002), see Figures. | 1,6-9,16-18,28-38,43-46,50-53,58,59,61,63,64,76-85,92-94,104-109,114,115,118,119,125,127<br>---<br>2-5,10-15,19-24,39-41,49,54-57,86-91,95-100,110-112,128-130,132,134-137,139,141-166 |

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

| Date of the actual completion of the international search | Date of mailing of the international search report |
|---|---|
| 17 December 2003 (17.12.2003) | 24 MAY 2004 |
| Name and mailing address of the ISA/US<br>Mail Stop PCT, Attn: ISA/US<br>Commissioner for Patents<br>P.O. Box 1450<br>Alexandria, Virginia 22313-1450<br>Facsimile No. (703)305-3230 | Authorized officer<br>David Bagnell FOR<br>Telephone No. (703) 308-1113 |

Form PCT/ISA/210 (second sheet) (July 1998)

PCT/US03/19993

## INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|---|---|---|
| X<br>---<br>Y | US 4,328,983 A (Gibson) 11 May 1982 (11.05.1982), see Figures. | 10-15,19-24,60,62,64-75,85-91,95-100,120-124,126<br>---<br>39-41,110-112,131,133,138,140 |
| Y | US 5,975,587 A (Wood et al.) 02 November 1999 (02.11.1999), see Figures and Abstract. | 39-41,110-112 |
| Y | US 5,862,866 A (Springer) 26 January 1999 (26.01.1999), see col. 8, lines 40-60. | 128-141,159-166 |
| Y | US 5,584,512 A (Carstensen) 17 December 1996 (17.12.1996), see col. 6, lines 25-55. | 142-151 |
| A | US 6,406,063 B1 (Pfeiffer) 18 June 2002 (18.06.2002), see Figures. | 1-166 |
| A | US 5,360,239 A (Klementich) 01 November 1994 (01.11.1994), see Figures. | 1-166 |
| A | US 5,895,079 A (Carstensen et al.) 20 April 1999 (20.04.1999), see Figures. | 1-166 |
| A | US 6,231,086 B1 (Tierling) 15 May 2001 (15.05.2001), see Figures. | 1-166 |
| A | US 4,832,382 A (Kapgan) 23 May 1989 (23.05.1989), see Figures. | 1-166 |

## INTERNATIONAL SEARCH REPORT

PCT/US03/19993

### BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-63 and145-166, drawn to a method for coupling tubulars and expanding the tubulars.

Group II, claim(s) 64-127, drawn to a tubing coupling.

Group III, claim(s) 128-140, drawn to a method and apparatus for extracting geothermal energy from a subterranean source of geothermal energy.

Group IV, claim(s) 142-144, drawn to a method for pressure testing tubing.

The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Group I is not required to be used in a pressure testing procedure or in the extracting of geothermal energy. Group II does not include expanding the tubing coupling and is not required to be used in a pressure testing procedure or in the extracting of geothermal energy. Group III does not include the pressure testing procedure. Group IV is not used in the extraction of geothermal energy nor does it include the specifics of the tubing coupling.

**Continuation of B. FIELDS SEARCHED Item 1:**

166/380,277,242.2,250.08,207,208,242.1,242.6,269,250.01,66;175/40,57,24;285/370,65,66,328,330,332,334.1,334.5,345,363,369,371,365,405,407;73/152.54,152.51,152.55

**Continuation of B. FIELDS SEARCHED Item 3:**

EAST

search terms: sleeve, flange, lip, shoulder, wellbore, threaded coupling, threaded connector, geothermal, pressure testing

# INTERNATIONAL SEARCH REPORT

International application No.
PCT/US03/19993

**Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)**

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claim Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claim Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:
Please See Continuation Sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**
☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

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(74) Agents: **MATTINGLY, Todd** et al.; Haynes and Boone, LLP, 901 Main Street, Suite 3100, Dallas, TX 75202-3789 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

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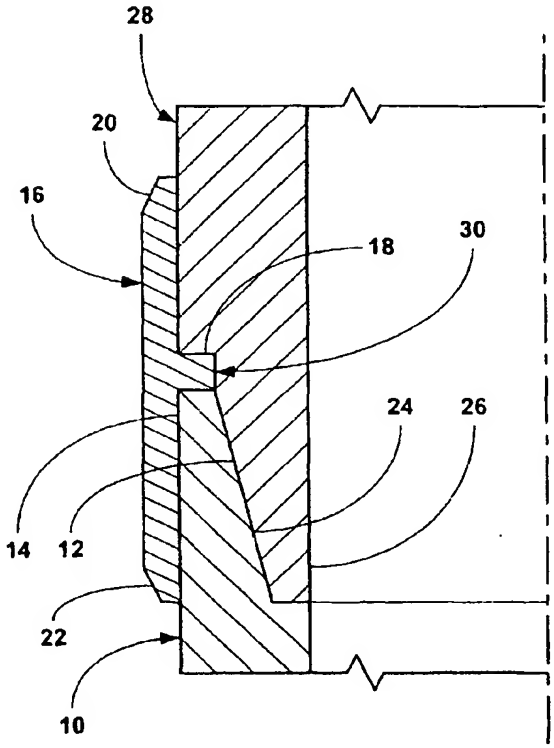
(54) Title: PROTECTIVE SLEEVE FOR THREADED CONNECTIONS FOR EXPANDABLE LINER HANGER




(57) Abstract: A tubular sleeve (16) is coupled to and overlaps the threaded connection between a pair of adjacent tubular members (10 and 28). The adjacent tubular members (10 and 28) are then radially expanded and plastically deformed.

WO 2004/010039 A3

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(84) **Designated States** *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Declaration under Rule 4.17:**
— *of inventorship (Rule 4.17(iv)) for US only*

**Published:**
— *with international search report*
— *with amended claims*

(88) **Date of publication of the international search report:**
8 July 2004

**Date of publication of the amended claims:** 27 January 2005

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

AMENDED CLAIMS
[received by the International Bureau on 20 July 2004 (20.07.2004);
original claims 1-166 replaced by new claims 1-253 (32 pages)]

## Claims

What is claimed is:

1. A method, comprising:
coupling an end of a first tubular member to an end of a tubular sleeve;
coupling an end of a second tubular member to another end of the tubular sleeve;
coupling the ends of the first and second tubular members; and
radially expanding and plastically deforming the first tubular member and the second tubular member.

2. The method of claim 1, wherein the tubular sleeve comprises an internal flange.

3. The method of claim 2, wherein coupling the end of the first tubular member to the end of the tubular sleeve comprises:
inserting the end of the first tubular member into the end of the tubular sleeve into abutment with the internal flange.

4. The method of claim 3, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:
inserting the end of the second tubular member into the other end of the tubular sleeve into abutment with the internal flange.

5. The method of claim 2, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:
inserting the end of the second tubular member into the other end of the tubular sleeve into abutment with the internal flange.

6. The method of claim 1, wherein the tubular sleeve comprises an external flange.

7. The method of claim 6, wherein coupling the end of the first tubular member to the end of the tubular sleeve comprises:
inserting the end of the tubular sleeve into the end of the first tubular member until the end of the first tubular member abuts the external flange.

8. The method of claim 7, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:
inserting the other end of the tubular sleeve into the end of the second tubular member until the end of the second tubular member abuts the external flange.

9. The method of claim 6, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:
inserting the other end of the tubular sleeve into the end of the second tubular member until the end of the second tubular member abuts the external flange.

10. The method of claim 1, wherein coupling the end of the first tubular member to the end of the tubular sleeve comprises:

inserting a retaining ring between the end of the first tubular member and the end of the tubular sleeve.

11. The method of claim 10, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

inserting another retaining ring between the end of the second tubular member and the other end of the tubular sleeve.

12. The method of claim 1, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

inserting a retaining ring between the end of the first tubular member and the other end of the tubular sleeve.

13. The method of claim 10, wherein the retaining ring is resilient.

14. The method of claim 11, wherein the retaining ring and the other retaining ring are resilient.

15. The method of claim 12, wherein the retaining ring is resilient.

16. The method of claim 1, wherein coupling the end of the first tubular member to the end of the tubular sleeve comprises:

deforming the end of the tubular sleeve.

17. The method of claim 16, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

deforming the other end of the tubular sleeve.

18. The method of claim 1, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

deforming the other end of the tubular sleeve.

19. The method of claim 1, wherein coupling the end of the first tubular member to the end of the tubular sleeve comprises:

coupling a retaining ring to the end of the first tubular member.

20. The method of claim 19, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

coupling another retaining ring to the end of the second tubular member.

21. The method of claim 1, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

coupling a retaining ring to the end of the second tubular member.

22. The method of claim 19, wherein the retaining ring is resilient.

23. The method of claim 20, wherein the retaining ring and the other retaining ring are resilient.

24. The method of claim 21, wherein the retaining ring is resilient.

25. The method of claim 1, wherein coupling the end of the first tubular member to the

end of the tubular sleeve comprises:

heating the end of the tubular sleeve; and

inserting the end of the first tubular member into the end of the tubular sleeve.

26. The method of claim 25, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

heating the other end of the tubular sleeve; and

inserting the end of the second tubular member into the other end of the tubular sleeve.

27. The method of claim 1, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

heating the other end of the tubular sleeve; and

inserting the end of the second tubular member into the other end of the tubular sleeve.

28. The method of claim 1, wherein coupling the end of the first tubular member to the end of the tubular sleeve comprises:

inserting the end of the first tubular member into the end of the tubular sleeve; and

latching the end of the first tubular member to the end of the tubular sleeve.

29. The method of claim 28, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

inserting the end of the second tubular member into the end of the tubular sleeve; and

latching the end of the second tubular member to the other end of the tubular sleeve.

30. The method of claim 1, wherein coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

inserting the end of the second tubular member into the end of the tubular sleeve; and

latching the end of the second tubular member to the other end of the tubular sleeve.

31. The method of claim 1, wherein the tubular sleeve further comprises one or more sealing members for sealing the interface between the tubular sleeve and at least one of the tubular members.

32. The method of claim 1, further comprising:

placing the tubular members in another structure; and

then radially expanding and plastically deforming the first tubular member and the second tubular member.

33. The method of claim 32, further comprising:

radially expanding the tubular sleeve into engagement with the structure.

34. The method of claim 32, further comprising:

sealing an annulus between the tubular sleeve and the other structure.

35. The method of claim 32, wherein the other structure comprises a wellbore.

36. The method of claim 32, wherein the other structure comprises a wellbore casing.

37. The method of claim 1, wherein the tubular sleeve further comprises a sealing element coupled to the exterior of the tubular sleeve.

38. The method of claim 1, wherein the tubular sleeve is metallic.

39. The method of claim 1, wherein the tubular sleeve is non-metallic.

40. The method of claim 1, wherein the tubular sleeve is plastic.

41. The method of claim 1, wherein the tubular sleeve is ceramic.

42. The method of claim 1, further comprising:

breaking the tubular sleeve.

43. The method of claim 1, wherein the tubular sleeve includes one or more longitudinal slots.

44. The method of claim 1, wherein the tubular sleeve includes one or more radial passages.

45. The method of claim 1, wherein radially expanding and plastically deforming the first tubular member, the second tubular member, and the tubular sleeve comprises:

displacing an expansion cone within and relative to the first and second tubular members.

46. The method of claim 1, wherein radially expanding and plastically deforming the first tubular member, the second tubular member, and the tubular sleeve comprises:

applying radial pressure to the interior surfaces of the first and second tubular member using a rotating member.

47. The method of claim 1, further comprising:

amorphously bonding the first and second tubular members during the radial expansion and plastic deformation of the first and second tubular members.

48. The method of claim 1, further comprising:

welding the first and second tubular members during the radial expansion and plastic deformation of the first and second tubular members.

49. The method of claim 1, further comprising:

providing a fluid tight seal within the threaded coupling between the first and second tubular members during the radial expansion and plastic deformation of the first and second tubular members.

50. The method of claim 1, further comprising:

placing the tubular sleeve in circumferential tension;

placing the end of the first tubular member in circumferential compression; and

placing the end of the second tubular member in circumferential compression.

51. The method of claim 1, further comprising:

placing the tubular sleeve in circumferential compression;

placing the end of the first tubular member in circumferential tension; and

placing the end of the second tubular member in circumferential tension.

52. The method of claim 1, wherein radially expanding and plastically deforming the first tubular member and the second tubular member comprises:

radially expanding and plastically deforming only the portions of the first and second members proximate the tubular sleeve.

53. The method of claim 52, further comprising:

providing a fluid tight seal between the tubular sleeve and at least one of the first and second tubular members.

54. The method of claim 1, wherein the first tubular member comprises internal threads; and wherein the second tubular member comprises external threads that engage the internal threads of the first tubular member.

55. The method of claim 54, wherein radially expanding and plastically deforming the first tubular member and the second tubular member comprises:

radially expanding and plastically deforming only the portions of the first and second members proximate the threads of the first and second tubular members.

56. The method of claim 55, further comprising:

providing a fluid tight seal between the threads of the first and second tubular members.

57. The method of claim 55, further comprising:

providing a fluid tight seal between the tubular sleeve and at least one of the first and second tubular members.

58. The method of claim 1, wherein the first and second tubular members comprise wellbore casings.

59. The method of claim 1, wherein the first and second tubular members comprise pipes.

60. A method, comprising:

providing a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

inserting an end of a first tubular member into an end of the tubular sleeve into abutment with the internal flange;

inserting an end of a second tubular member into another end of the tubular sleeve into abutment the internal flange;

threadably coupling the ends of the first and second tubular members;

radially expanding and plastically deforming the first tubular member and the second

tubular member;

placing the tubular sleeve in circumferential tension;

placing the end of the first tubular member in circumferential compression; and

placing the end of the second tubular member in circumferential compression.

61. A method, comprising:

providing a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

inserting an end of the tubular sleeve into an end of a first tubular member until the end of the first tubular member abuts with the external flange;

inserting another end of the tubular sleeve into an end of the second tubular member until the end of the second tubular member abuts the external flange;

threadably coupling the ends of the first and second tubular members;

radially expanding and plastically deforming the first tubular member and the second tubular member;

placing the tubular sleeve in circumferential compression;

placing the end of the first tubular member in circumferential tension; and

placing the end of the second tubular member in circumferential tension.

62. A method, comprising:

providing a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

inserting an end of a first tubular member into an end of the tubular sleeve into abutment with the internal flange;

inserting an end of a second tubular member into another end of the tubular sleeve into abutment the internal flange;

threadably coupling the ends of the first and second tubular members;

radially expanding and plastically deforming only the portions of the first tubular member and the second tubular member proximate the threads of the first and second tubular members;

placing the tubular sleeve in circumferential tension;

placing the end of the first tubular member in circumferential compression; and

placing the end of the second tubular member in circumferential compression.

63. A method, comprising:

providing a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

inserting an end of the tubular sleeve into an end of a first tubular member until the end of the first tubular member abuts with the external flange;

inserting another end of the tubular sleeve into an end of the second tubular member

until the end of the second tubular member abuts the external flange;

threadably coupling the ends of the first and second tubular members;

radially expanding and plastically deforming only the portions of the first tubular member and the second tubular member proximate the threads of the first and second tubular members;

placing the tubular sleeve in circumferential compression;

placing the end of the first tubular member in circumferential tension; and

placing the end of the second tubular member in circumferential tension.

64. An apparatus, comprising:

a tubular sleeve;

a first tubular member coupled to an end of the tubular sleeve; and

a second tubular member coupled to another end of the tubular sleeve and the first tubular member;

wherein the tubular sleeve is stressed in a first direction;

wherein the end portions of at least one of the first and second tubular members are stressed in a second direction; and

wherein the first direction is different from the second direction.

65. The apparatus of claim 64,

wherein the tubular sleeve is in circumferential tension;

wherein the end portion of the first tubular member is in circumferential compression; and

wherein the end portion of the second tubular member is in circumferential compression.

66. The apparatus of claim 64,

wherein the tubular sleeve is in circumferential compression;

wherein the end portion of the first tubular member is in circumferential tension; and

wherein the end portion of the second tubular member is in circumferential tension.

67. The apparatus of claim 64, wherein the tubular sleeve comprises an internal flange.

68. The apparatus of claim 67, wherein the end portion of the first tubular member is received within an end of the tubular sleeve; and wherein the end portion of the second tubular member is received within another end of the tubular sleeve.

69. The apparatus of claim 68, wherein the end portions of the first and second tubular members abut the internal flange of the tubular sleeve.

70. The apparatus of claim 67, wherein the end portion of the first tubular member is received within an end of the tubular sleeve.

71. The apparatus of claim 70, wherein the end portions of the first and second tubular members abut the internal flange of the tubular sleeve.

72. The apparatus of claim 67, wherein the end portion of the second tubular member is received within an end of the tubular sleeve.

73. The apparatus of claim 72, wherein the end portions of the first and second tubular members abut the internal flange of the tubular sleeve.

74. The apparatus of claim 67, wherein the internal flange of the tubular sleeve is positioned between the ends of the tubular sleeve.

75. The apparatus of claim 67, wherein the internal flange of the tubular sleeve is positioned at an end of the tubular sleeve.

76. The apparatus of claim 64, wherein the tubular sleeve comprises an external flange.

77. The apparatus of claim 76, wherein an end portion of the tubular sleeve is received within the first tubular member; and wherein another end portion of the tubular sleeve is received within the end portion of the second tubular member.

78. The apparatus of claim 77, wherein the end portions of the first and second tubular members abut the external flange of the tubular sleeve.

79. The apparatus of claim 76, wherein an end portion of the tubular sleeve is received within the end portion of the first tubular member.

80. The apparatus of claim 79, wherein the end portions of the first and second tubular members abut the external flange of the tubular sleeve.

81. The apparatus of claim 76, wherein an end portion of the tubular sleeve is received within the end portion of the second tubular member.

82. The apparatus of claim 81, wherein the end portions of the first and second tubular members abut the external flange of the tubular sleeve.

83. The apparatus of claim 76, wherein the external flange of the tubular sleeve is positioned between the ends of the tubular sleeve.

84. The apparatus of claim 76, wherein the external flange of the tubular sleeve is positioned at an end of the tubular sleeve.

85. The apparatus of claim 64, wherein the tubular sleeve further comprises one or more sealing members for sealing the interface between the tubular sleeve and at least one of the tubular members.

86. The apparatus of claim 64, further comprising:

a retaining ring positioned between the end of the first tubular member and the end of the tubular sleeve.

87. The apparatus of claim 86, further comprising:

another retaining ring positioned between the end of the second tubular member and the other end of the tubular sleeve.

88. The apparatus of claim 64, further comprising:

a retaining ring positioned between the end of the first tubular member and the other



AMENDED SHEET (ARTICLE 19)

end of the tubular sleeve.

89. The apparatus of claim 86, wherein the retaining ring is resilient.

90. The apparatus of claim 87, wherein the retaining ring and the other retaining ring are resilient.

91. The apparatus of claim 88, wherein the retaining ring is resilient.

92. The apparatus of claim 64, wherein the end of the tubular sleeve is deformed onto the end of the first tubular member.

93. The apparatus of claim 92, wherein the other end of the tubular sleeve is deformed onto the end of the second tubular member.

94. The apparatus of claim 64, wherein the other end of the tubular sleeve is deformed onto the end of the second tubular member.

95. The apparatus of claim 64, further comprising:

a retaining ring coupled to the end of the first tubular member for retaining the tubular sleeve onto the end of the first tubular member.

96. The apparatus of claim 95, further comprising:

another retaining ring coupled to the end of the second tubular member for retaining the other end of the tubular sleeve onto the end of the second tubular member.

97. The apparatus of claim 64, further comprising:

a retaining ring coupled to the end of the second tubular member for retaining the other end of the tubular sleeve onto the end of the second tubular member.

98. The apparatus of claim 95, wherein the retaining ring is resilient.

99. The apparatus of claim 96, wherein the retaining ring and the other retaining ring are resilient.

100. The apparatus of claim 97, wherein the retaining ring is resilient.

101. The apparatus of claim 64, further comprising:

a locking ring for coupling the end of the first tubular member to the end of the tubular sleeve.

102. The apparatus of claim 101, further comprising:

another locking ring for coupling the end of the second tubular member to the other end of the tubular sleeve.

103. The apparatus of claim 64, further comprising:

a locking ring for coupling the end of the second tubular member to the other end of the tubular sleeve.

104. The apparatus of claim 64, further comprising:

a structure for receiving the first and second tubular members and the tubular sleeve; wherein the tubular sleeve contacts the interior surface of the structure.

105. The apparatus of claim 104, wherein the tubular sleeve further comprises:

a sealing member for fluidicly sealing the interface between the tubular sleeve and the structure.

106. The apparatus of claim 104, wherein the other structure comprises a wellbore.

107. The apparatus of claim 104, wherein the other structure comprises a wellbore casing.

108. The apparatus of claim 64, wherein the tubular sleeve further comprises a sealing element coupled to the exterior surface of the tubular sleeve.

109. The apparatus of claim 64, wherein the tubular sleeve is metallic.

110. The apparatus of claim 64, wherein the tubular sleeve is non-metallic.

111. The apparatus of claim 64, wherein the tubular sleeve is plastic.

112. The apparatus of claim 64, wherein the tubular sleeve is ceramic.

113. The apparatus of claim 64, wherein the tubular sleeve is frangible.

114. The apparatus of claim 64, wherein the tubular sleeve comprises one or more longitudinal slots.

115. The apparatus of claim 64, wherein the tubular sleeve comprises one or more radial passages.

116. The apparatus of claim 64, wherein the first and second tubular members are amorphously bonded.

117. The apparatus of claim 64, wherein the first and second tubular members are welded.

118. The apparatus of claim 64, wherein only the portions of the first and second tubular members proximate the tubular sleeve are plastically deformed.

119. The apparatus of claim 118, wherein a fluid tight seal is provided between the tubular sleeve and at least one of the first and second tubular members.

120. The apparatus of claim 64, wherein the first tubular member comprises internal threads; and wherein the second tubular member comprises external threads that engage the internal threads of the first tubular member.

121. The apparatus of claim 120, wherein only the portions of the first and second members proximate the threads of the first and second tubular members are plastically deformed.

122. The apparatus of claim 121, wherein a fluid tight seal is provided between the threads of the first and second tubular members.

123. The apparatus of claim 121, wherein a fluid tight seal is provided between the tubular sleeve and at least one of the first and second tubular members.

124. An apparatus, comprising:

a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

a first tubular member received within an end of the tubular sleeve in abutment with

the internal flange that comprises internal threads; and

a second tubular member received within another end of the tubular sleeve in abutment with the internal flange that comprises external threads that engage the internal threads of the first tubular member;

wherein the tubular sleeve is in circumferential tension;

wherein the end of first tubular member is in circumferential compression; and

wherein the end of the second tubular member is in circumferential compression.

125. An apparatus, comprising:

a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

a first tubular member that receives an end of the tubular sleeve and abuts the external flange that comprises internal threads; and

a second tubular member that receives another end of the tubular sleeve that abuts the external flange that comprises external threads that engage the internal threads of the first tubular member;

wherein the tubular sleeve is in circumferential compression;

wherein the first tubular member is in circumferential tension; and

wherein the second tubular member is in circumferential tension.

126. An apparatus, comprising:

a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

a first tubular member received within an end of the tubular sleeve in abutment with the internal flange that comprises internal threads; and

a second tubular member received within another end of the tubular sleeve in abutment with the internal flange that comprises external threads that engage the internal threads of the first tubular member;

wherein the tubular sleeve is in circumferential tension;

wherein the end of first tubular member is in circumferential compression;

wherein the end of the second tubular member is in circumferential compression;

wherein a fluid tight seal is provided between the tubular sleeve and at least one of the first and second tubular members; and

wherein a fluid tight seal is provided between the threads of the first and second tubular members.

127. An apparatus, comprising:

a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

a first tubular member that receives an end of the tubular sleeve and abuts the

external flange that comprises internal threads; and

a second tubular member that receives another end of the tubular sleeve that abuts the external flange that comprises external threads that engage the internal threads of the first tubular member;

wherein the tubular sleeve is in circumferential compression;

wherein the first tubular member is in circumferential tension;

wherein the second tubular member is in circumferential tension;

wherein a fluid tight seal is provided between the tubular sleeve and at least one of the first and second tubular members; and

wherein a fluid tight seal is provided between the threads of the first and second tubular members.

128. A method of extracting geothermal energy from a subterranean source of geothermal energy, comprising:

drilling a borehole that traverses the subterranean source of geothermal energy;

positioning a first casing string within the borehole;

radially expanding and plastically deforming the first casing string within the borehole;

positioning a second casing string within the borehole that traverses the subterranean source of geothermal energy;

overlapping a portion of the second casing string with a portion of the first casing string;

radially expanding and plastically deforming the second casing string within the borehole; and

extracting geothermal energy from the subterranean source of geothermal energy using the first and second casing strings.

129. The method of claim 128, wherein the interior diameter of a passage defined by the first and second casing strings is constant.

130. The method of claim 128, wherein at least one of the first and second casing strings comprise:

a tubular sleeve;

a first tubular member coupled to an end of the tubular sleeve comprising internal threads at an end portion; and

a second tubular member coupled to another end of the tubular sleeve comprising external threads at an end portion that engage the internal threads of the end portion of the first tubular member.

131. A method of extracting geothermal energy from a subterranean source of geothermal energy, comprising:

drilling a borehole that traverses the subterranean source of geothermal energy;

positioning a first casing string within the borehole;

radially expanding and plastically deforming the first casing string within the borehole;

positioning a second casing string within the borehole that traverses the subterranean source of geothermal energy;

overlapping a portion of the second casing string with a portion of the first casing string;

radially expanding and plastically deforming the second casing string within the borehole; and

extracting geothermal energy from the subterranean source of geothermal energy using the first and second casing strings;

wherein the interior diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

a first tubular member received within an end of the tubular sleeve in abutment with the internal flange that comprises internal threads; and

a second tubular member received within another end of the tubular sleeve in abutment with the internal flange that comprises external threads that engage the internal threads of the first tubular member.

132. A method of extracting geothermal energy from a subterranean source of geothermal energy, comprising:

drilling a borehole that traverses the subterranean source of geothermal energy;

positioning a first casing string within the borehole;

radially expanding and plastically deforming the first casing string within the borehole;

positioning a second casing string within the borehole that traverses the subterranean source of geothermal energy;

overlapping a portion of the second casing string with a portion of the first casing string;

radially expanding and plastically deforming the second casing string within the borehole; and

extracting geothermal energy from the subterranean source of geothermal energy using the first and second casing strings;

wherein the interior diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

a first tubular member that receives an end of the tubular sleeve that abuts external flange that comprises internal threads; and

a second tubular member that receives another end of the tubular sleeve that abuts the external flange that comprises external threads that engage the internal threads of the first tubular member.

133. A method of extracting geothermal energy from a subterranean source of geothermal energy, comprising:

drilling a borehole that traverses the subterranean source of geothermal energy;

positioning a first casing string within the borehole;

radially expanding and plastically deforming the first casing string within the borehole;

positioning a second casing string within the borehole that traverses the subterranean source of geothermal energy;

overlapping a portion of the second casing string with a portion of the first casing string;

radially expanding and plastically deforming the second casing string within the borehole; and

extracting geothermal energy from the subterranean source of geothermal energy using the first and second casing strings;

wherein the interior diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

a first tubular member received within an end of the tubular sleeve in abutment with the internal flange that comprises internal threads; and

a second tubular member received within another end of the tubular sleeve in abutment with the internal flange that comprises external threads that engage the internal threads of the first tubular member;

wherein the tubular sleeve is in circumferential tension;

wherein the first tubular member is in circumferential compression;

wherein the second tubular member is in circumferential compression;

wherein a fluid tight seal is provided between the tubular sleeve and at least one of the first and second tubular members; and

wherein a fluid tight seal is provided between the threads of the first and second tubular members.

134. A method of extracting geothermal energy from a subterranean source of geothermal energy, comprising:

drilling a borehole that traverses the subterranean source of geothermal energy;

positioning a first casing string within the borehole;

radially expanding and plastically deforming the first casing string within the borehole;

positioning a second casing string within the borehole that traverses the subterranean source of geothermal energy;

overlapping a portion of the second casing string with a portion of the first casing string;

radially expanding and plastically deforming the second casing string within the borehole; and

extracting geothermal energy from the subterranean source of geothermal energy using the first and second casing strings;

wherein the interior diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

a first tubular member that receives an end of the tubular sleeve that abuts external flange that comprises internal threads; and

a second tubular member that receives another end of the tubular sleeve that abuts the external flange that comprises external threads that engage the internal threads of the first tubular member;

wherein the tubular sleeve is in circumferential compression;

wherein the first tubular member is in circumferential tension;

wherein the second tubular member is in circumferential tension;

wherein a fluid tight seal is provided between the tubular sleeve and at least one of the first and second tubular members; and

wherein a fluid tight seal is provided between the threads of the first and second tubular members.

135. An apparatus for extracting geothermal energy from a subterranean source of geothermal energy, comprising:

a borehole that traverses the subterranean source of geothermal energy;

a first casing string positioned within the borehole; and

a second casing positioned within the borehole that overlaps with the first casing string that traverses the subterranean source of geothermal energy;

wherein the first casing string and the second casing string are radially expanded and

plastically deformed within the borehole.

136. The apparatus of claim 135, wherein the interior diameter of a passage defined by the first and second casing strings is constant.

137. The apparatus of claim 135, wherein at least one of the first and second casing strings comprise:

a tubular sleeve;

a first tubular member coupled to an end of the tubular sleeve comprising internal threads at an end portion; and

a second tubular member coupled to another end of the tubular sleeve comprising external threads at an end portion that engage the internal threads of the end portion of the first tubular member.

138. An apparatus for extracting geothermal energy from a subterranean source of geothermal energy, comprising:

a borehole that traverses the subterranean source of geothermal energy;

a first casing string positioned within the borehole;

a second casing string within the borehole that traverses the subterranean source of geothermal energy that overlaps with the first casing string;

wherein the first and second casing strings are radially expanded and plastically deformed within the borehole;

wherein the inside diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

a first tubular member received within an end of the tubular sleeve in abutment with the internal flange that comprises internal threads; and

a second tubular member received within another end of the tubular sleeve in abutment with the internal flange that comprises external threads that engage the internal threads of the first tubular member.

139. An apparatus for extracting geothermal energy from a subterranean source of geothermal energy, comprising:

a borehole that traverses the subterranean source of geothermal energy;

a first casing string positioned within the borehole; and

a second casing string positioned within the borehole that traverses the subterranean source of geothermal energy that overlaps with the first casing string;

wherein the interior diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

a first tubular member that receives an end of the tubular sleeve that abuts external flange that comprises internal threads; and

a second tubular member that receives another end of the tubular sleeve that abuts the external flange that comprises external threads that engage the internal threads of the first tubular member.

140. An apparatus for extracting geothermal energy from a subterranean source of geothermal energy, comprising:

a borehole that traverses the subterranean source of geothermal energy;

a first casing string positioned within the borehole;

a second casing string within the borehole that traverses the subterranean source of geothermal energy that overlaps with the first casing string;

wherein the first and second casing strings are radially expanded and plastically deformed within the borehole;

wherein the inside diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

a first tubular member received within an end of the tubular sleeve in abutment with the internal flange that comprises internal threads;

a second tubular member received within another end of the tubular sleeve in abutment with the internal flange that comprises external threads that engage the internal threads of the first tubular member;

wherein the tubular sleeve is in circumferential tension;

wherein the first tubular member is in circumferential compression;

wherein the second tubular member is in circumferential compression;

wherein a fluid tight seal is provided between the tubular sleeve and at least one of the first and second tubular members; and

wherein a fluid tight seal is provided between the threads of the first and second tubular members.

141. An apparatus for extracting geothermal energy from a subterranean source of geothermal energy, comprising:

a borehole that traverses the subterranean source of geothermal energy;

a first casing string positioned within the borehole; and

a second casing string positioned within the borehole that traverses the subterranean source of geothermal energy that overlaps with the first casing string;

wherein the interior diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

a first tubular member that receives an end of the tubular sleeve that abuts external flange that comprises internal threads;

a second tubular member that receives another end of the tubular sleeve that abuts the external flange that comprises external threads that engage the internal threads of the first tubular member;

wherein the tubular sleeve is in circumferential compression;

wherein the first tubular member is in circumferential tension;

wherein the second tubular member is in circumferential tension;

wherein a fluid tight seal is provided between the tubular sleeve and at least one of the first and second tubular members; and

wherein a fluid tight seal is provided between the threads of the first and second tubular members.

142. A method, comprising:

coupling the ends of first and second tubular members;

injecting a pressurized fluid through the first and second tubular members;

determining if any of the pressurized fluid leaks through the coupled ends of the first and second tubular members; and

if a predetermined amount of the pressurized fluid leaks through the coupled ends of the first and second tubular members, then coupling a tubular sleeve to the ends of the first and second tubular members and radially expanding and plastically deforming only the portions of the first and second tubular members proximate the tubular sleeve.

143. The method of claim 142, wherein radially expanding and plastically deforming only the portions of the first and second tubular members proximate the tubular sleeve comprises:

displacing an expansion cone within and relative to the first and second tubular members.

144. The method of claim 142, wherein radially expanding and plastically deforming only the portions of the first and second tubular members proximate the tubular sleeve comprises:

applying radial pressure to the interior surfaces of the first and second tubular member proximate the tubular sleeve using a rotating member.

145. The method of claim 1, further comprising:

transmitting energy through the first and second tubular members.

146. The method of claim 145, wherein the energy comprises electrical energy.

147. The method of claim 146, wherein the electrical energy comprises a communication signal.

148. The method of claim 145, wherein the energy comprises thermal energy.

149. The method of claim 145, wherein the energy comprises acoustic energy.

150. The method of claim 145, wherein the energy is transmitted through the first and second tubular members prior to radially expanding and plastically deforming the first and second tubular members.

151. The method of claim 145, wherein the energy is transmitted through the first and second tubular members after radially expanding and plastically deforming the first and second tubular members.

152. The method of claim 32, further comprising:

transmitting energy through the first and second tubular members.

153. The method of claim 152, wherein the energy comprises electrical energy.

154. The method of claim 153, wherein the electrical energy comprises a communication signal.

155. The method of claim 152, wherein the energy comprises thermal energy.

156. The method of claim 152, wherein the energy comprises acoustic energy.

157. The method of claim 152, wherein the energy is transmitted through the first and second tubular members prior to radially expanding and plastically deforming the first and second tubular members.

158. The method of claim 152, wherein the energy is transmitted through the first and second tubular members after radially expanding and plastically deforming the first and second tubular members.

159. A system comprising:

a source of energy;

a borehole formed in the earth;

a first tubular member positioned within the borehole operably coupled to the source of energy;

a second tubular member positioned within the borehole coupled to the first tubular member; and

a tubular sleeve positioned within the borehole coupled to the first and second tubular members;

wherein the first tubular member, second tubular member, and the tubular sleeve are plastically deformed into engagement with one another.

160. The system of claim 159, wherein the source of energy comprises a source of electrical energy.

161. The system of claim 159, wherein the source of energy comprises a source of thermal energy.

162. The system of claim 159, wherein the source of energy comprises a source of acoustic energy.

163. A method of operating a well for extracting hydrocarbons from a subterranean formation, comprising:

drilling a borehole into the earth that traverses the subterranean formation;

positioning a wellbore casing in the borehole;

transmitting energy through the wellbore casing; and

extracting hydrocarbons from the subterranean formation;

wherein the wellbore casing comprises:

a first tubular member;

a second tubular member coupled to the first tubular member; and

a tubular sleeve coupled to the first and second tubular member; and

wherein the first tubular member, the second tubular member, and the tubular sleeve are plastically deformed into engagement with one another.

164. The method of claim 163, wherein the energy comprises electrical energy.

165. The system of claim 163, wherein the energy comprises thermal energy.

166. The system of claim 163, wherein the energy comprises acoustic energy.

167. A system, comprising:

means for coupling an end of a first tubular member to an end of a tubular sleeve;

means for coupling an end of a second tubular member to another end of the tubular sleeve;

means for coupling the ends of the first and second tubular members; and

means for radially expanding and plastically deforming the first tubular member and the second tubular member.

168. The system of claim 167, wherein the tubular sleeve comprises an internal flange.

169. The system of claim 168, wherein means for coupling the end of the first tubular member to the end of the tubular sleeve comprises:

means for inserting the end of the first tubular member into the end of the tubular sleeve into abutment with the internal flange.

170. The system of claim 169, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for inserting the end of the second tubular member into the other end of the tubular sleeve into abutment with the internal flange.

171. The system of claim 168, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for inserting the end of the second tubular member into the other end of the tubular sleeve into abutment with the internal flange.

172. The system of claim 167, wherein the tubular sleeve comprises an external flange.

173. The system of claim 172, wherein means for coupling the end of the first tubular member to the end of the tubular sleeve comprises:

means for inserting the end of the tubular sleeve into the end of the first tubular member until the end of the first tubular member abuts the external flange.

174. The system of claim 173, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for inserting the other end of the tubular sleeve into the end of the second tubular member until the end of the second tubular member abuts the external flange.

175. The system of claim 172, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for inserting the other end of the tubular sleeve into the end of the second tubular member until the end of the second tubular member abuts the external flange.

176. The system of claim 167, wherein means for coupling the end of the first tubular member to the end of the tubular sleeve comprises:

means for inserting a retaining ring between the end of the first tubular member and the end of the tubular sleeve.

177. The system of claim 176, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for inserting another retaining ring between the end of the second tubular member and the other end of the tubular sleeve.

178. The system of claim 167, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for inserting a retaining ring between the end of the first tubular member and the other end of the tubular sleeve.

179. The system of claim 176, wherein the retaining ring is resilient.

180. The system of claim 177, wherein the retaining ring and the other retaining ring are resilient.

181. The system of claim 178, wherein the retaining ring is resilient.

182. The system of claim 167, wherein means for coupling the end of the first tubular member to the end of the tubular sleeve comprises:

means for deforming the end of the tubular sleeve.

183. The system of claim 182, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for deforming the other end of the tubular sleeve.

184. The system of claim 167, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for deforming the other end of the tubular sleeve.

185. The system of claim 167, wherein means for coupling the end of the first tubular member to the end of the tubular sleeve comprises:

means for coupling a retaining ring to the end of the first tubular member.

186. The system of claim 185, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for coupling another retaining ring to the end of the second tubular member.

187. The system of claim 167, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for coupling a retaining ring to the end of the second tubular member.

188. The system of claim 185, wherein the retaining ring is resilient.

189. The system of claim 186, wherein the retaining ring and the other retaining ring are resilient.

190. The system of claim 187, wherein the retaining ring is resilient.

191. The system of claim 167, wherein means for coupling the end of the first tubular member to the end of the tubular sleeve comprises:

means for heating the end of the tubular sleeve; and

means for inserting the end of the first tubular member into the end of the tubular sleeve.

192. The system of claim 191, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for heating the other end of the tubular sleeve; and

means for inserting the end of the second tubular member into the other end of the tubular sleeve.

193. The system of claim 167, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for heating the other end of the tubular sleeve; and

means for inserting the end of the second tubular member into the other end of the tubular sleeve.

194. The system of claim 167, wherein means for coupling the end of the first tubular member to the end of the tubular sleeve comprises:

means for inserting the end of the first tubular member into the end of the tubular sleeve; and

means for latching the end of the first tubular member to the end of the tubular sleeve.

195. The system of claim 194, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for inserting the end of the second tubular member into the end of the tubular sleeve; and

means for latching the end of the second tubular member to the other end of the tubular sleeve.

196. The system of claim 167, wherein means for coupling the end of the second tubular member to the other end of the tubular sleeve comprises:

means for inserting the end of the second tubular member into the end of the tubular sleeve; and

means for latching the end of the second tubular member to the other end of the tubular sleeve.

197. The system of claim 167, wherein the tubular sleeve further comprises one or more sealing members for sealing the interface between the tubular sleeve and at least one of the tubular members.

198. The system of claim 167, further comprising:

means for placing the tubular members in another structure; and

means for then radially expanding and plastically deforming the first tubular member and the second tubular member.

199. The system of claim 198, further comprising:

means for radially expanding the tubular sleeve into engagement with the structure.

200. The system of claim 198, further comprising:

means for sealing an annulus between the tubular sleeve and the other structure.

201. The system of claim 198, wherein the other structure comprises a wellbore.

202. The system of claim 198, wherein the other structure comprises a wellbore casing.

203. The system of claim 167, wherein the tubular sleeve further comprises a sealing element coupled to the exterior of the tubular sleeve.

204. The system of claim 167, wherein the tubular sleeve is metallic.

205. The system of claim 167, wherein the tubular sleeve is non-metallic.

206. The system of claim 167, wherein the tubular sleeve is plastic.

207. The system of claim 167, wherein the tubular sleeve is ceramic.

208. The system of claim 167, further comprising:

means for breaking the tubular sleeve.

209. The system of claim 167, wherein the tubular sleeve includes one or more longitudinal slots.

210. The system of claim 167, wherein the tubular sleeve includes one or more radial passages.

211. The system of claim 167, wherein means for radially expanding and plastically deforming the first tubular member, the second tubular member, and the tubular sleeve comprises:

means for displacing an expansion cone within and relative to the first and second tubular members.

212. The system of claim 167, wherein means for radially expanding and plastically deforming the first tubular member, the second tubular member, and the tubular sleeve comprises:

means for applying radial pressure to the interior surfaces of the first and second tubular member using a rotating member.

213. The system of claim 167, further comprising:

means for amorphously bonding the first and second tubular members during the radial expansion and plastic deformation of the first and second tubular members.

214. The system of claim 167, further comprising:

means for welding the first and second tubular members during the radial expansion and plastic deformation of the first and second tubular members.

215. The system of claim 167, further comprising:

means for providing a fluid tight seal within the threaded coupling between the first and second tubular members during the radial expansion and plastic deformation of the first and second tubular members.

216. The system of claim 167, further comprising:

means for placing the tubular sleeve in circumferential tension;

means for placing the end of the first tubular member in circumferential compression; and

means for placing the end of the second tubular member in circumferential compression.

217. The system of claim 167, further comprising:

means for placing the tubular sleeve in circumferential compression;

means for placing the end of the first tubular member in circumferential tension; and

means for placing the end of the second tubular member in circumferential tension.

218. The system of claim 167, wherein radially expanding and plastically deforming the first tubular member and the second tubular member comprises:

means for radially expanding and plastically deforming only the portions of the first and second members proximate the tubular sleeve.

219. The system of claim 218, further comprising:

means for providing a fluid tight seal between the tubular sleeve and at least one of the first and second tubular members.

220. The system of claim 167, wherein the first tubular member comprises internal threads; and wherein the second tubular member comprises external threads that engage the internal threads of the first tubular member.

221. The system of claim 220, wherein means for radially expanding and plastically deforming the first tubular member and the second tubular member comprises:

means for radially expanding and plastically deforming only the portions of the first and second members proximate the threads of the first and second tubular members.

222. The system of claim 221, further comprising:

means for providing a fluid tight seal between the threads of the first and second tubular members.

223. The system of claim 221, further comprising:

means for providing a fluid tight seal between the tubular sleeve and at least one of the first and second tubular members.

224. The system of claim 167, wherein the first and second tubular members comprise wellbore casings.

225. The system of claim 167, wherein the first and second tubular members comprise pipes.

226. A system, comprising:

means for providing a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

means for inserting an end of a first tubular member into an end of the tubular sleeve into abutment with the internal flange;

means for inserting an end of a second tubular member into another end of the tubular sleeve into abutment the internal flange;

means for threadably coupling the ends of the first and second tubular members;

means for radially expanding and plastically deforming the first tubular member and the second tubular member;

means for placing the tubular sleeve in circumferential tension;

means for placing the end of the first tubular member in circumferential compression; and

means for placing the end of the second tubular member in circumferential

compression.

227. A system, comprising:

means for providing a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

means for inserting an end of the tubular sleeve into an end of a first tubular member until the end of the first tubular member abuts with the external flange;

means for inserting another end of the tubular sleeve into an end of the second tubular member until the end of the second tubular member abuts the external flange;

means for threadably coupling the ends of the first and second tubular members;

means for radially expanding and plastically deforming the first tubular member and the second tubular member;

means for placing the tubular sleeve in circumferential compression;

means for placing the end of the first tubular member in circumferential tension; and

means for placing the end of the second tubular member in circumferential tension.

228. A system, comprising:

means for providing a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

means for inserting an end of a first tubular member into an end of the tubular sleeve into abutment with the internal flange;

means for inserting an end of a second tubular member into another end of the tubular sleeve into abutment the internal flange;

means for threadably coupling the ends of the first and second tubular members;

means for radially expanding and plastically deforming only the portions of the first tubular member and the second tubular member proximate the threads of the first and second tubular members;

means for placing the tubular sleeve in circumferential tension;

means for placing the end of the first tubular member in circumferential compression; and

means for placing the end of the second tubular member in circumferential compression.

229. A system, comprising:

means for providing a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

means for inserting an end of the tubular sleeve into an end of a first tubular member until the end of the first tubular member abuts with the external flange;

means for inserting another end of the tubular sleeve into an end of the second

tubular member until the end of the second tubular member abuts the external flange;

means for threadably coupling the ends of the first and second tubular members;

means for radially expanding and plastically deforming only the portions of the first tubular member and the second tubular member proximate the threads of the first and second tubular members;

means for placing the tubular sleeve in circumferential compression;

means for placing the end of the first tubular member in circumferential tension; and

means for placing the end of the second tubular member in circumferential tension.

230. A system for extracting geothermal energy from a subterranean source of geothermal energy, comprising:

means for drilling a borehole that traverses the subterranean source of geothermal energy;

means for positioning a first casing string within the borehole;

means for radially expanding and plastically deforming the first casing string within the borehole;

means for positioning a second casing string within the borehole that traverses the subterranean source of geothermal energy;

means for overlapping a portion of the second casing string with a portion of the first casing string;

means for radially expanding and plastically deforming the second casing string within the borehole; and

means for extracting geothermal energy from the subterranean source of geothermal energy using the first and second casing strings.

231. The system of claim 230, wherein the interior diameter of a passage defined by the first and second casing strings is constant.

232. The system of claim 230, wherein at least one of the first and second casing strings comprise:

a tubular sleeve;

a first tubular member coupled to an end of the tubular sleeve comprising internal threads at an end portion; and

a second tubular member coupled to another end of the tubular sleeve comprising external threads at an end portion that engage the internal threads of the end portion of the first tubular member.

233. A system for extracting geothermal energy from a subterranean source of geothermal energy, comprising:

means for drilling a borehole that traverses the subterranean source of geothermal

energy;

means for positioning a first casing string within the borehole;

means for radially expanding and plastically deforming the first casing string within the borehole;

means for positioning a second casing string within the borehole that traverses the subterranean source of geothermal energy;

means for overlapping a portion of the second casing string with a portion of the first casing string;

means for radially expanding and plastically deforming the second casing string within the borehole; and

means for extracting geothermal energy from the subterranean source of geothermal energy using the first and second casing strings;

wherein the interior diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

a first tubular member received within an end of the tubular sleeve in abutment with the internal flange that comprises internal threads; and

a second tubular member received within another end of the tubular sleeve in abutment with the internal flange that comprises external threads that engage the internal threads of the first tubular member.

234. A system for extracting geothermal energy from a subterranean source of geothermal energy, comprising:

means for drilling a borehole that traverses the subterranean source of geothermal energy;

means for positioning a first casing string within the borehole;

means for radially expanding and plastically deforming the first casing string within the borehole;

means for positioning a second casing string within the borehole that traverses the subterranean source of geothermal energy;

means for overlapping a portion of the second casing string with a portion of the first casing string;

means for radially expanding and plastically deforming the second casing string within the borehole; and

means for extracting geothermal energy from the subterranean source of geothermal energy using the first and second casing strings;

wherein the interior diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

a first tubular member that receives an end of the tubular sleeve that abuts external flange that comprises internal threads; and

a second tubular member that receives another end of the tubular sleeve that abuts the external flange that comprises external threads that engage the internal threads of the first tubular member.

235. A system for extracting geothermal energy from a subterranean source of geothermal energy, comprising:

means for drilling a borehole that traverses the subterranean source of geothermal energy;

means for positioning a first casing string within the borehole;

means for radially expanding and plastically deforming the first casing string within the borehole;

means for positioning a second casing string within the borehole that traverses the subterranean source of geothermal energy;

means for overlapping a portion of the second casing string with a portion of the first casing string;

means for radially expanding and plastically deforming the second casing string within the borehole; and

means for extracting geothermal energy from the subterranean source of geothermal energy using the first and second casing strings;

wherein the interior diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an internal flange positioned between the ends of the tubular sleeve;

a first tubular member received within an end of the tubular sleeve in abutment with the internal flange that comprises internal threads; and

a second tubular member received within another end of the tubular sleeve in abutment with the internal flange that comprises external threads that engage the internal threads of the first tubular member;

wherein the tubular sleeve is in circumferential tension;

wherein the first tubular member is in circumferential compression;

wherein the second tubular member is in circumferential compression;

wherein a fluid tight seal is provided between the tubular sleeve and at least one of the first and second tubular members; and

wherein a fluid tight seal is provided between the threads of the first and second tubular members.

236. A system for extracting geothermal energy from a subterranean source of geothermal energy, comprising:

means for drilling a borehole that traverses the subterranean source of geothermal energy;

means for positioning a first casing string within the borehole;

means for radially expanding and plastically deforming the first casing string within the borehole;

means for positioning a second casing string within the borehole that traverses the subterranean source of geothermal energy;

means for overlapping a portion of the second casing string with a portion of the first casing string;

means for radially expanding and plastically deforming the second casing string within the borehole; and

means for extracting geothermal energy from the subterranean source of geothermal energy using the first and second casing strings;

wherein the interior diameter of a passage defined by the first and second casing strings is constant; and

wherein at least one of the first and second casing strings comprise:

a tubular sleeve comprising an external flange positioned between the ends of the tubular sleeve;

a first tubular member that receives an end of the tubular sleeve that abuts external flange that comprises internal threads; and

a second tubular member that receives another end of the tubular sleeve that abuts the external flange that comprises external threads that engage the internal threads of the first tubular member;

wherein the tubular sleeve is in circumferential compression;

wherein the first tubular member is in circumferential tension;

wherein the second tubular member is in circumferential tension;

wherein a fluid tight seal is provided between the tubular sleeve and at least one of the first and second tubular members; and

wherein a fluid tight seal is provided between the threads of the first and second tubular members.

237. A system, comprising:

means for coupling the ends of first and second tubular members;

means for injecting a pressurized fluid through the first and second tubular members;

means for determining if any of the pressurized fluid leaks through the coupled ends of the first and second tubular members; and

means for if a predetermined amount of the pressurized fluid leaks through the coupled ends of the first and second tubular members, then coupling a tubular sleeve to the ends of the first and second tubular members and radially expanding and plastically deforming only the portions of the first and second tubular members proximate the tubular sleeve.

238. The system of claim 237, wherein means for radially expanding and plastically deforming only the portions of the first and second tubular members proximate the tubular sleeve comprises:

means for displacing an expansion cone within and relative to the first and second tubular members.

239. The system of claim 237, wherein means for radially expanding and plastically deforming only the portions of the first and second tubular members proximate the tubular sleeve comprises:

means for applying radial pressure to the interior surfaces of the first and second tubular member proximate the tubular sleeve using a rotating member.

240. The system of claim 167, further comprising:

means for transmitting energy through the first and second tubular members.

241. The system of claim 240, wherein the energy comprises electrical energy.

242. The system of claim 241, wherein the electrical energy comprises a communication signal.

243. The system of claim 240, wherein the energy comprises thermal energy.

244. The system of claim 240, wherein the energy comprises acoustic energy.

245. The system of claim 240, wherein the energy is transmitted through the first and second tubular members prior to radially expanding and plastically deforming the first and second tubular members.

246. The system of claim 240, wherein the energy is transmitted through the first and second tubular members after radially expanding and plastically deforming the first and second tubular members.

247. The system of claim 198, further comprising:

means for transmitting energy through the first and second tubular members.

248. The system of claim 247, wherein the energy comprises electrical energy.

249. The system of claim 248, wherein the electrical energy comprises a communication

signal.

250. The system of claim 247, wherein the energy comprises thermal energy.

251. The system of claim 247, wherein the energy comprises acoustic energy.

252. The system of claim 247, wherein the energy is transmitted through the first and second tubular members prior to radially expanding and plastically deforming the first and second tubular members.

253. The system of claim 247, wherein the energy is transmitted through the first and second tubular members after radially expanding and plastically deforming the first and second tubular members.

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